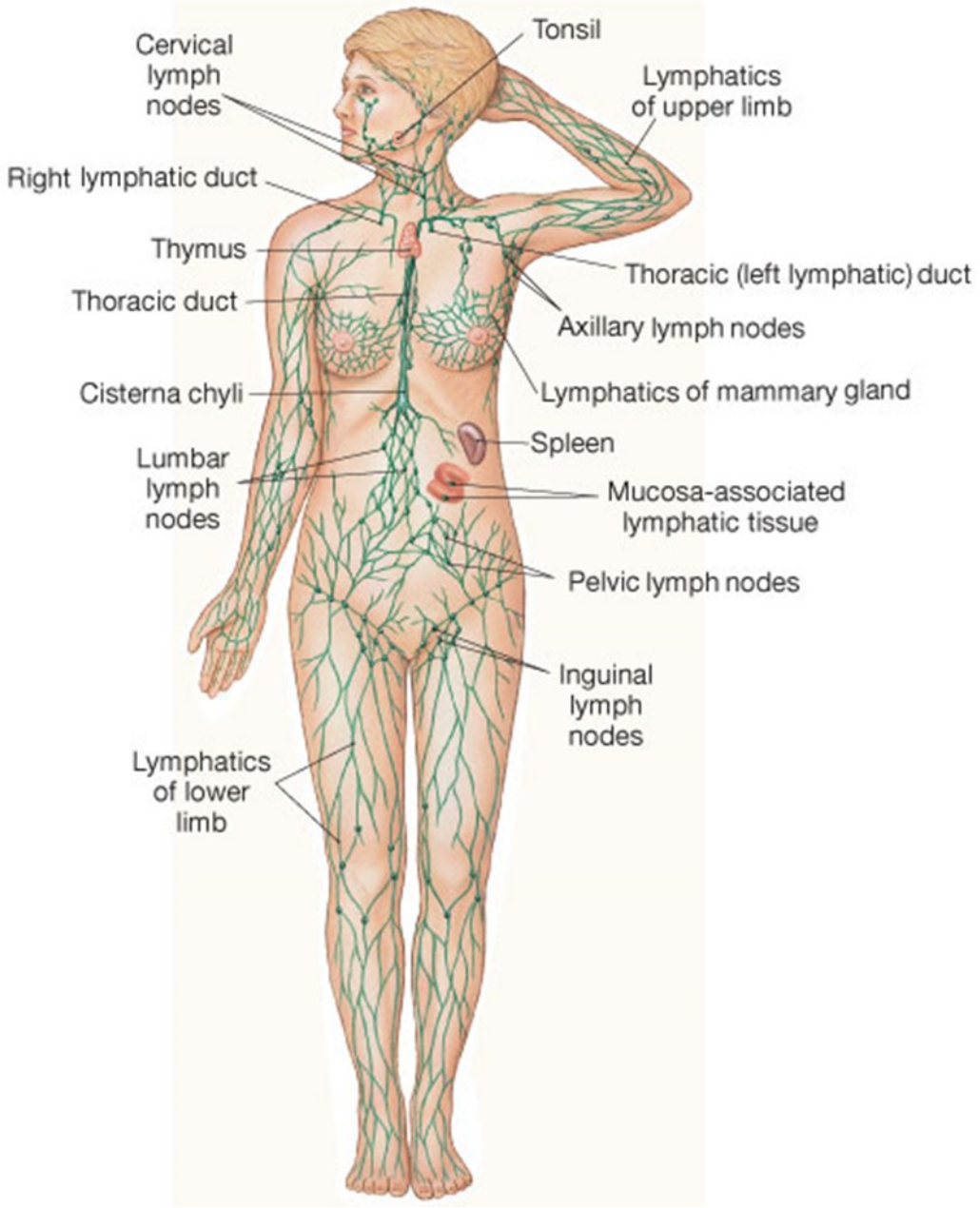
The Lymphatic System



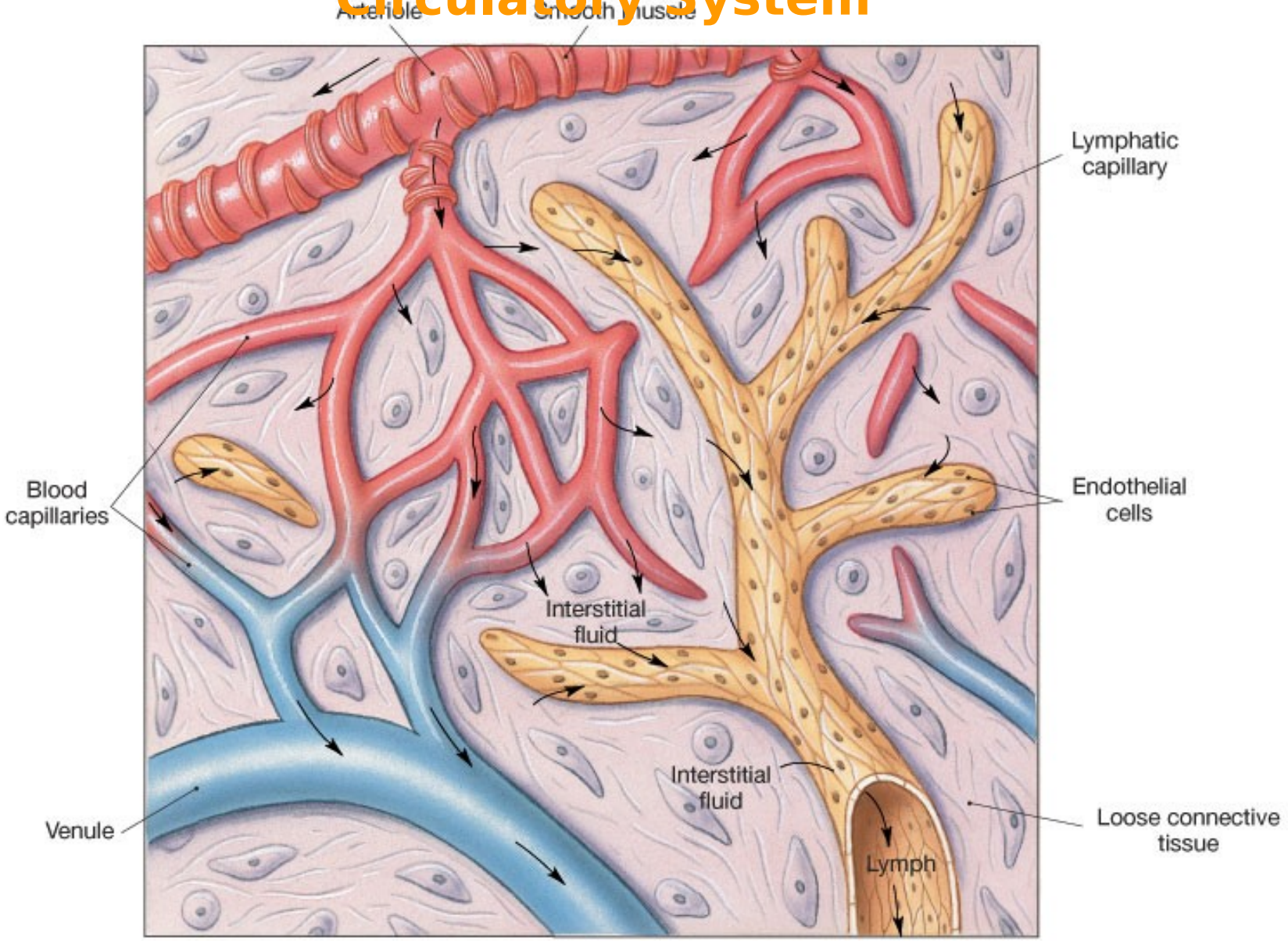
Roles of the Lymphatic System

1) One-way drainage system.

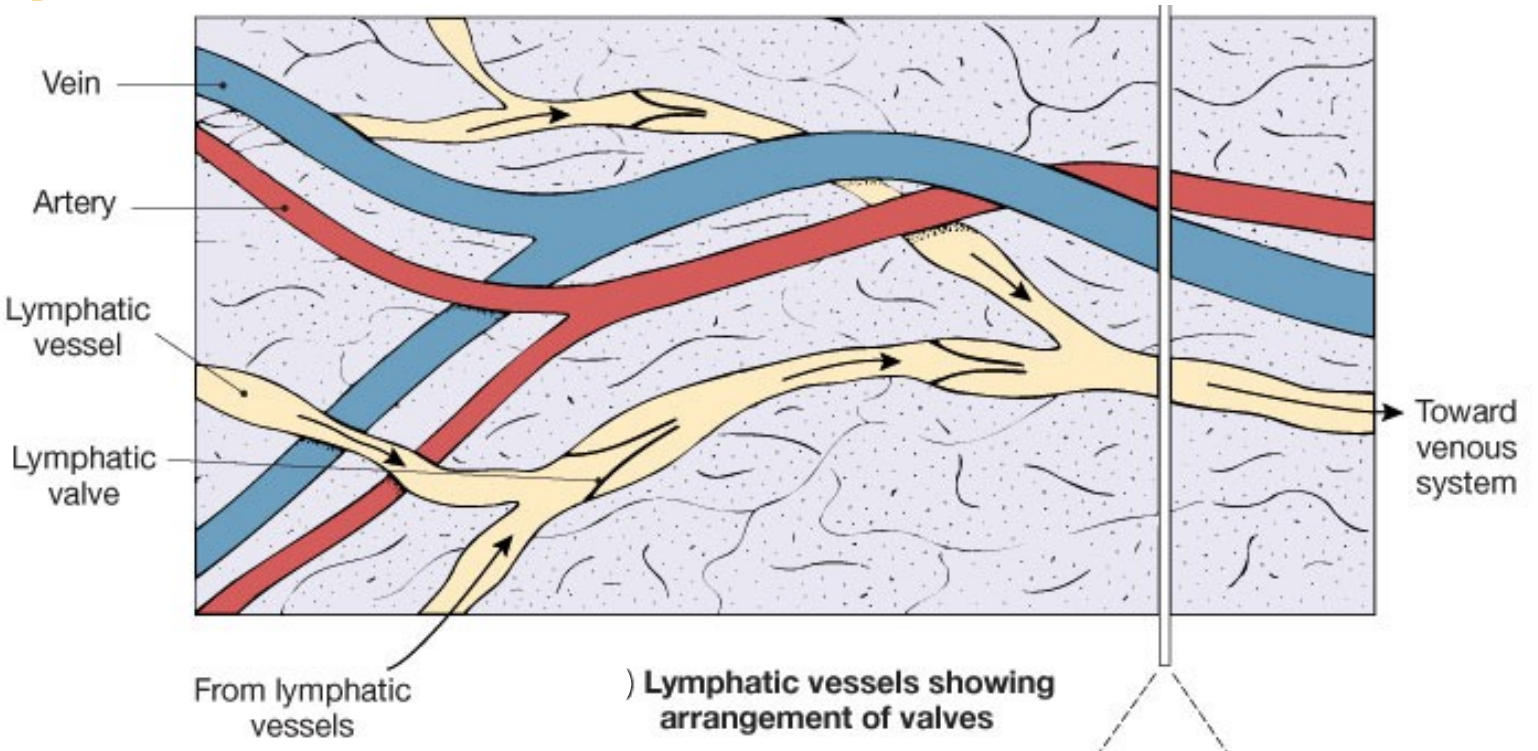
2) Lipid Absorption from Small Intestine.

3) Produce & circulates Immune cells.

Lymphatic Vessels are a component of the Circulatory System

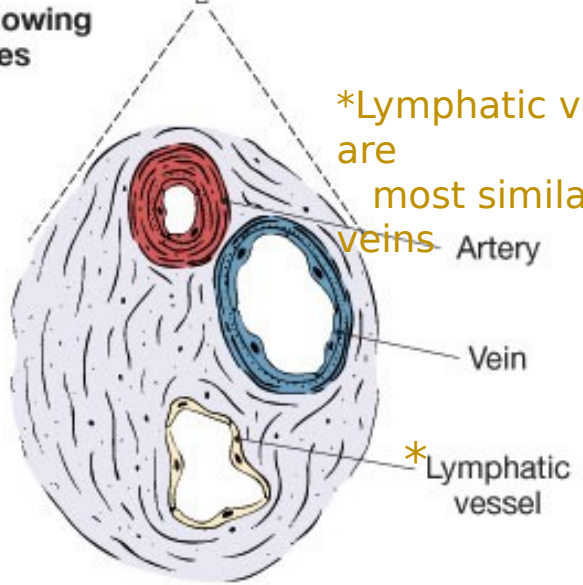


Comparison of Arteries, Veins and Lymphatic Vessels



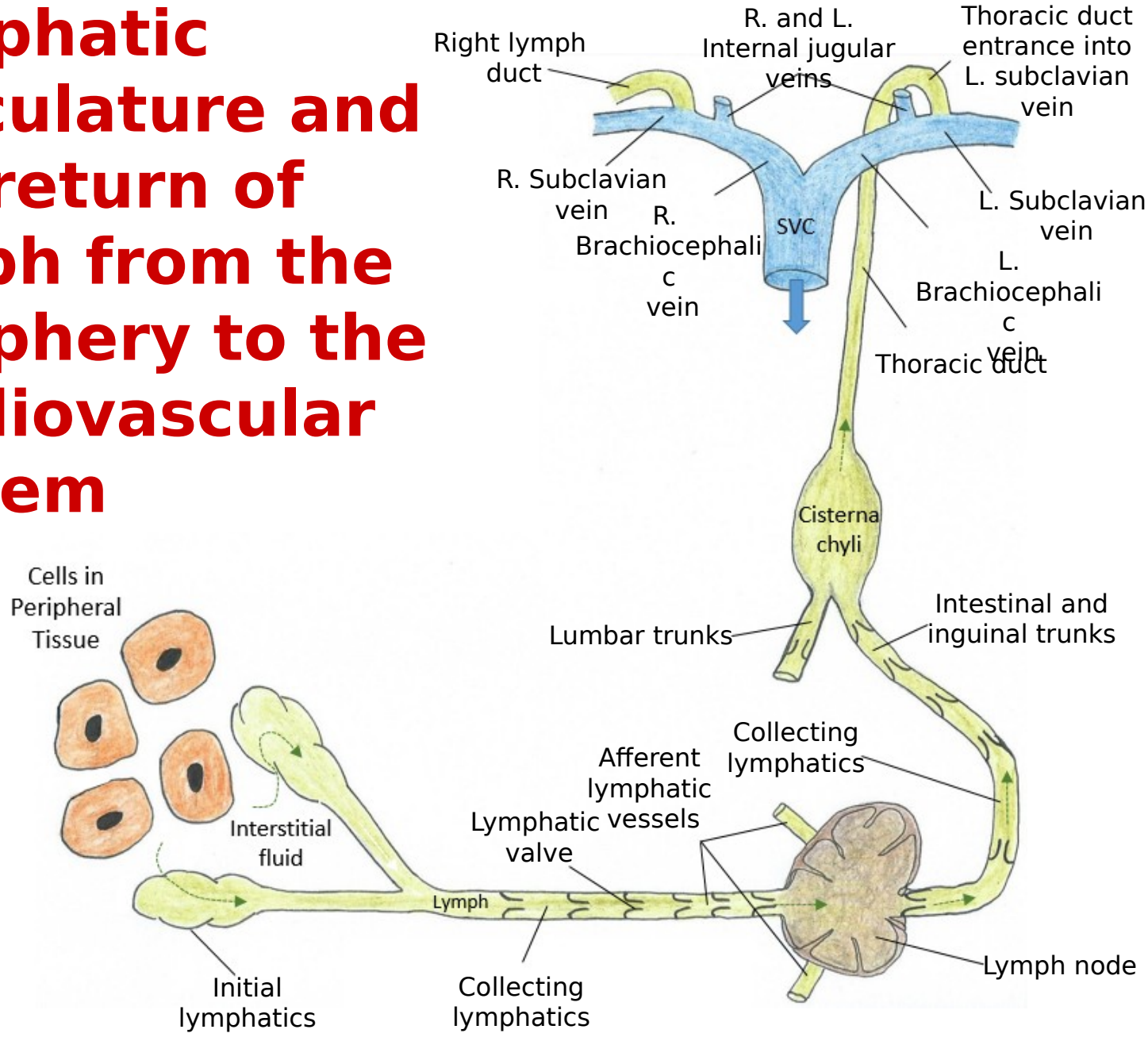
) **Lymphatic vessels showing arrangement of valves**

Valves in lymphatic vessels prevent backflow of lymph as it is transported back toward the heart from the tissues.



*Lymphatic vessels are most similar to veins

Lymphatic Vasculature and the return of lymph from the periphery to the Cardiovascular System



The return of lymph to the from the Lymphatic trunks

ular trunks

↑

bclavian trunks

↑

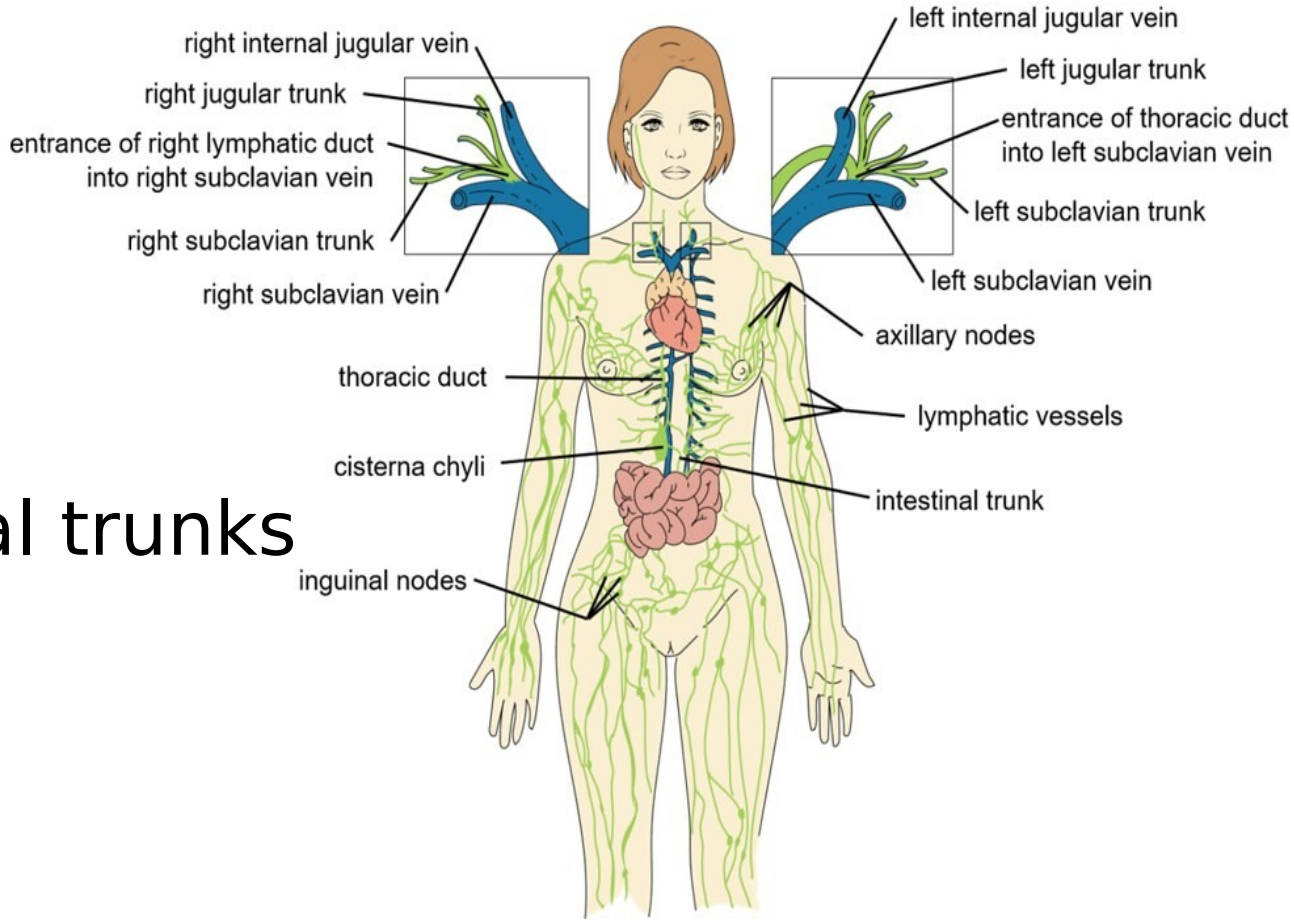
onchomediastinal trunks

↑

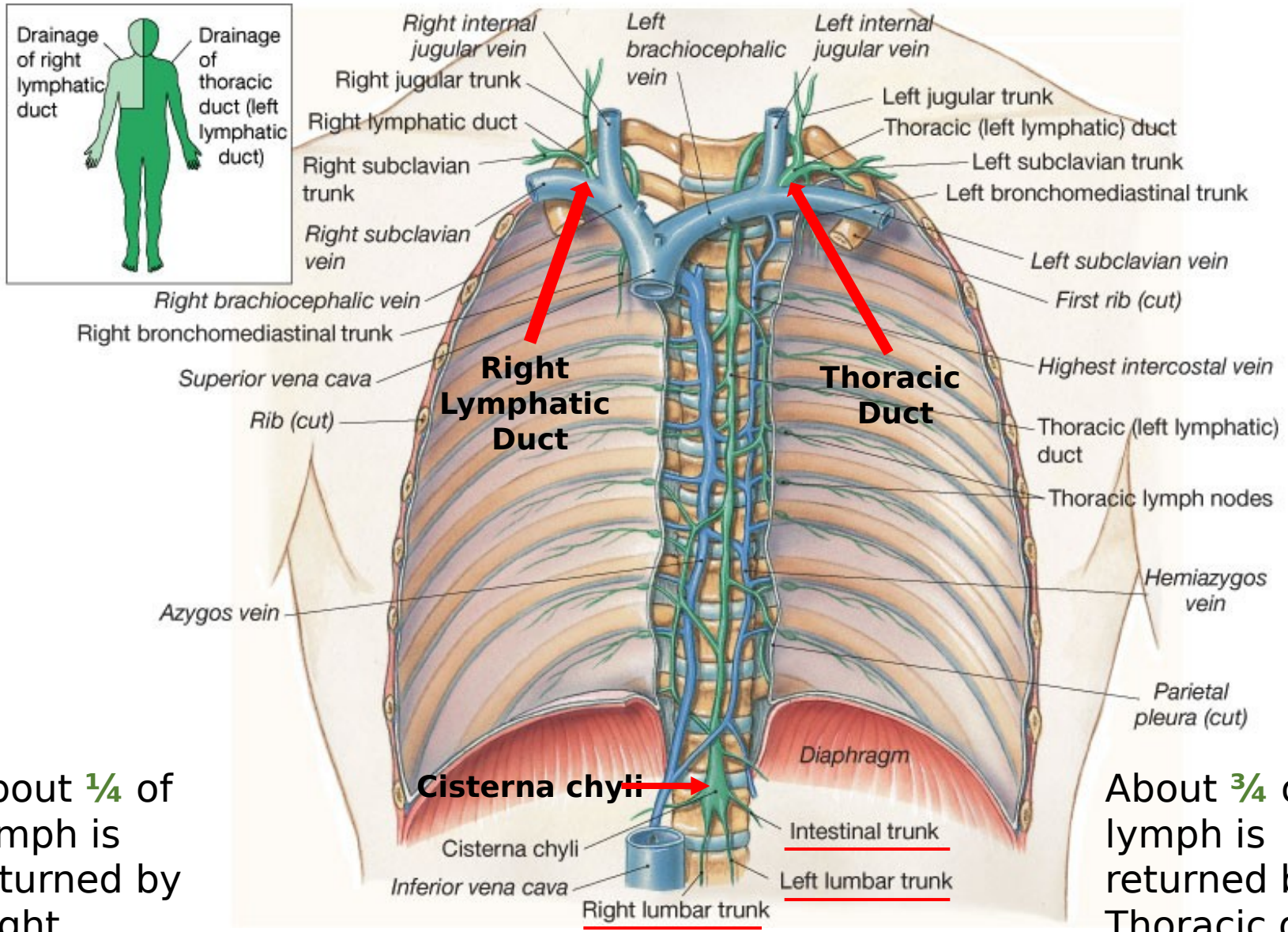
estinal trunks

↑

mbar trunks



Location of Lymph Return to L. and R. Subclavian Veins



About ¼ of lymph is returned by Right

About ¾ of lymph is returned by the Thoracic duct.

Lymphoid Tissues:

Un-encapsulated lymphatic tissues

Tonsils

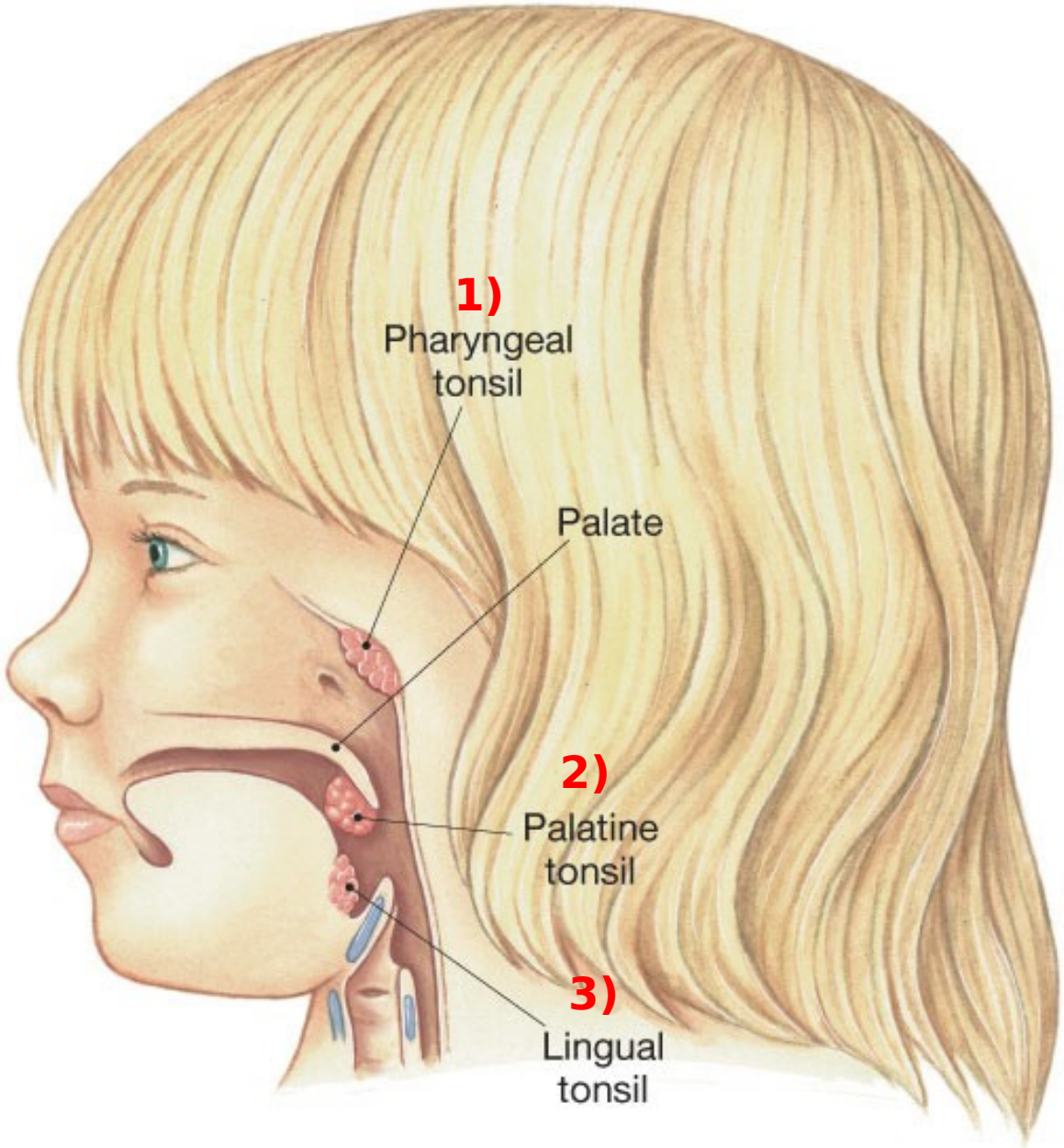
1) Pharyngeal

2) Palatine

3) Lingual

Tonsils are located in strategic locations

The Tonsils


1)
Pharyngeal tonsil
Palate
2)
Palatine tonsil
3)
Lingual tonsil

Lymphoid Organs:

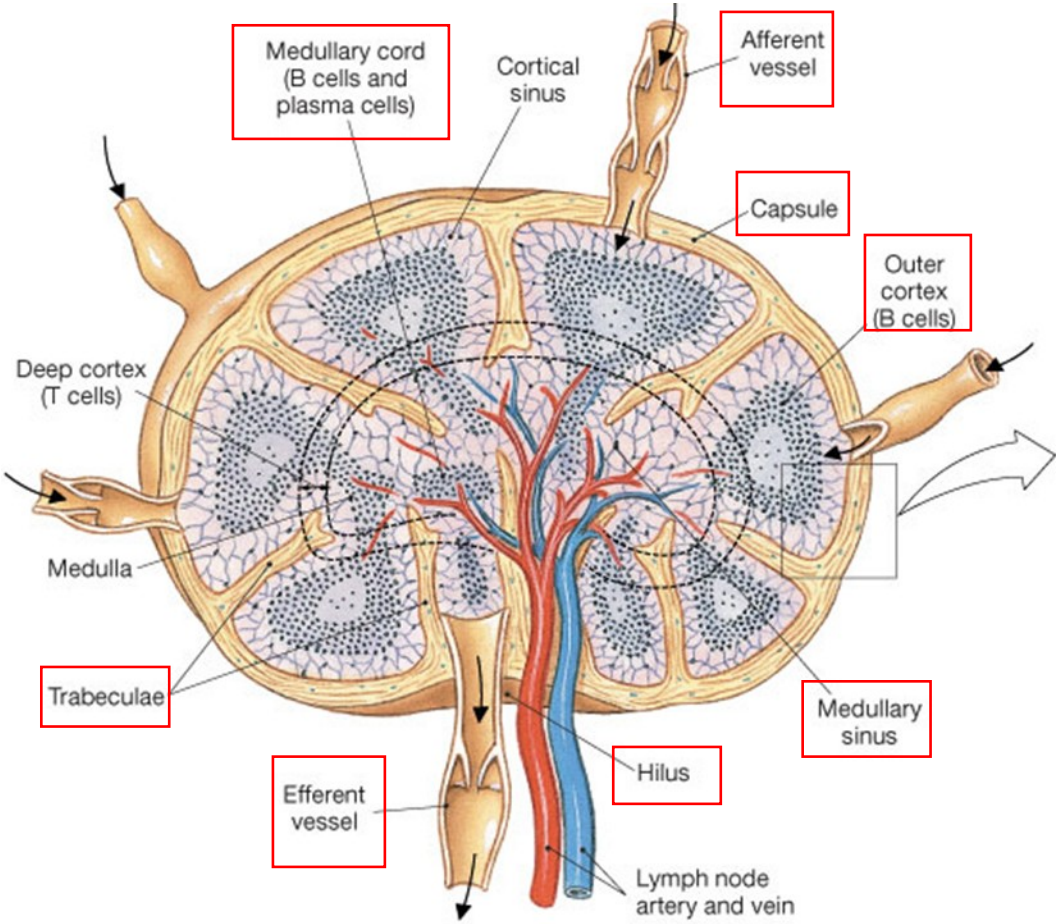
Surrounded by fibrous capsule (*encapsulated*)

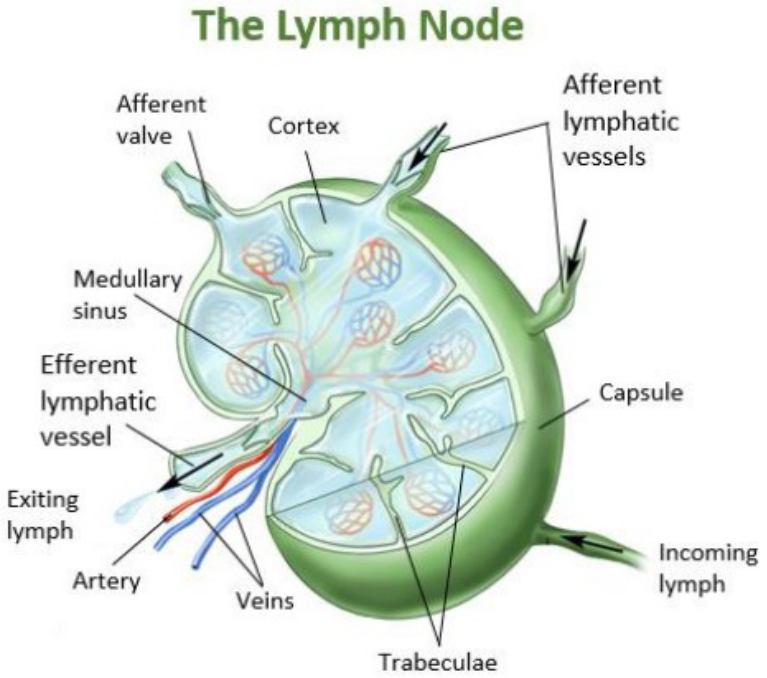
Lymph Nodes

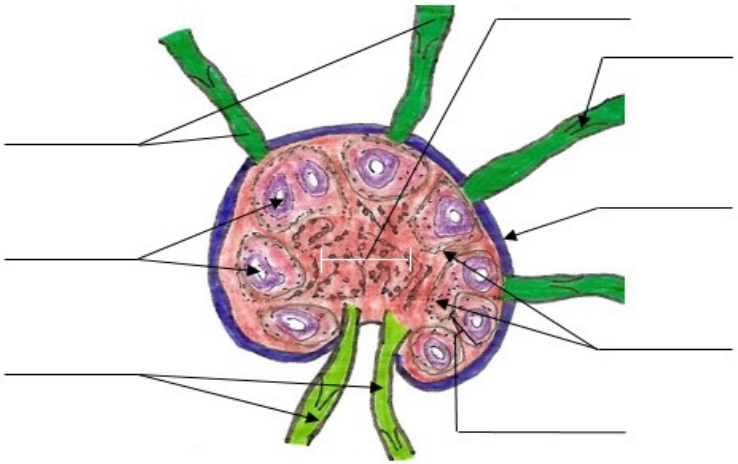
Thymus

Spleen

Structure of a Lymph Node



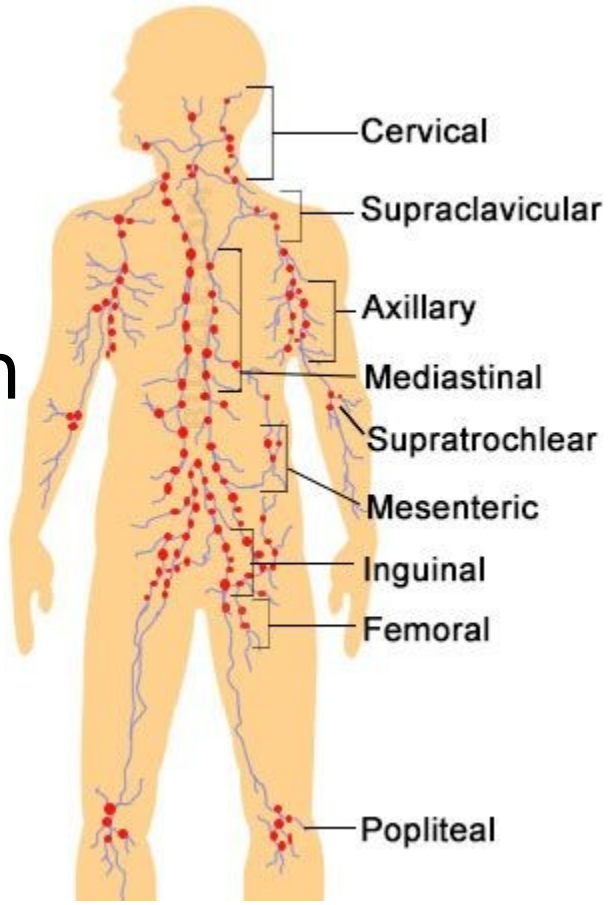




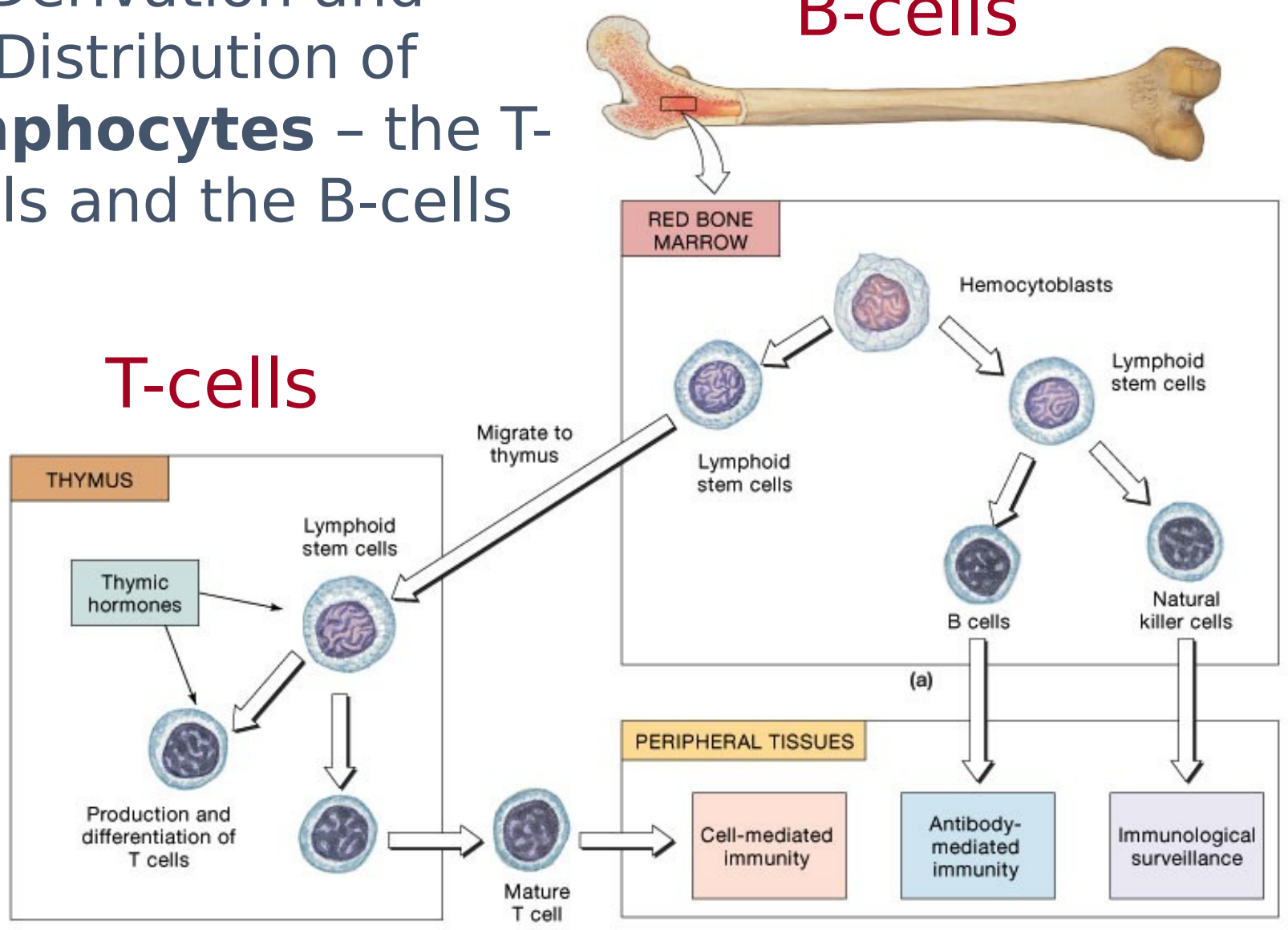
Histology of a Lymph Node

Find the Various Lymph Nodes in the Body

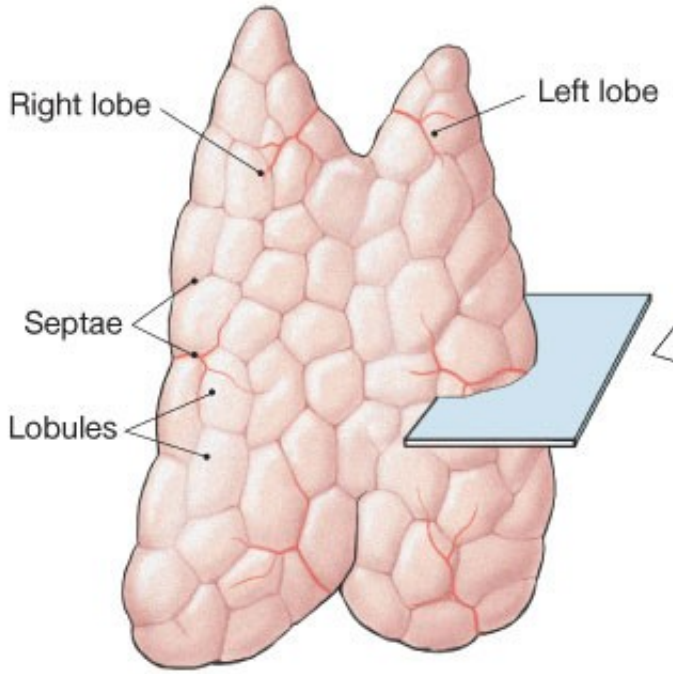
- Cervical lymph nodes
- Supraclavicular lymph nodes
- Axillary lymph nodes
- Supratrochlear lymph nodes
- Mediastinal & Thoracic lymph nodes
- Lumbar lymph nodes
- Pelvic lymph nodes
- Inguinal lymph nodes
- Femoral lymph nodes
- Popliteal lymph nodes

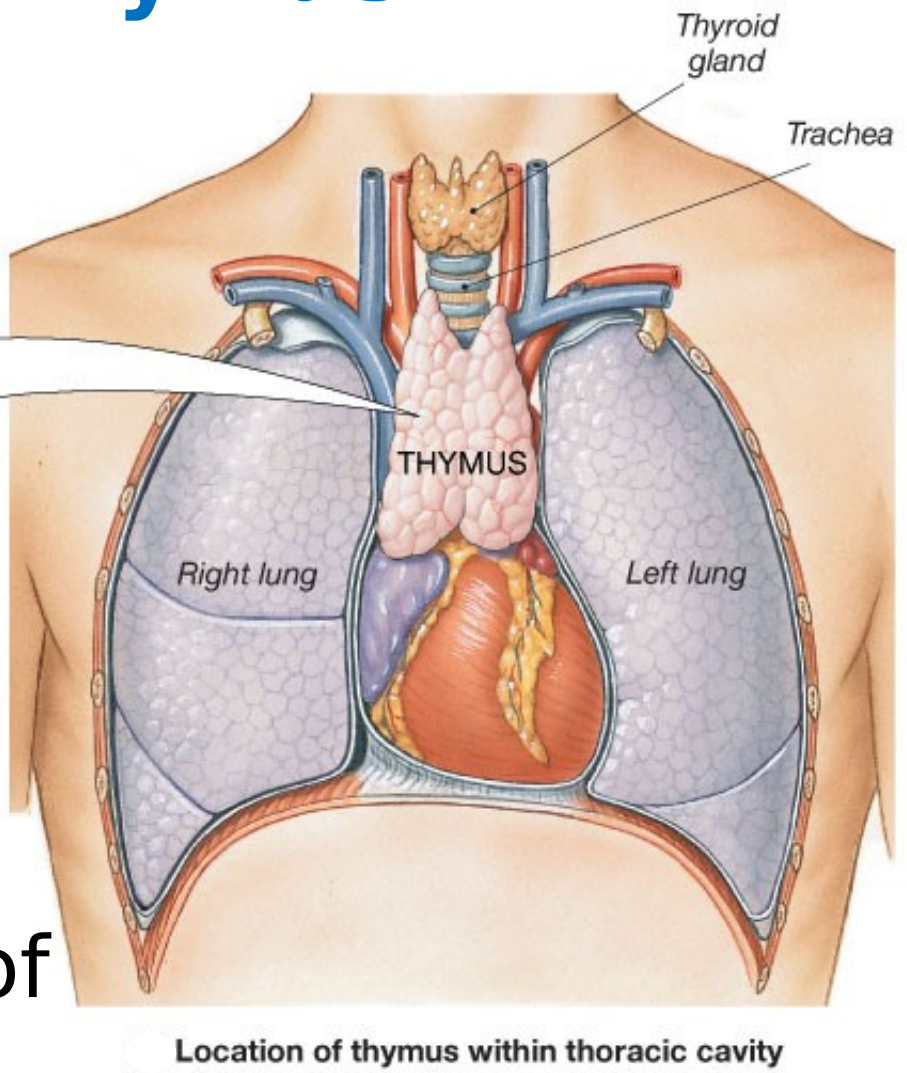


Derivation and Distribution of **Lymphocytes** – the T-cells and the B-cells



The Thymus

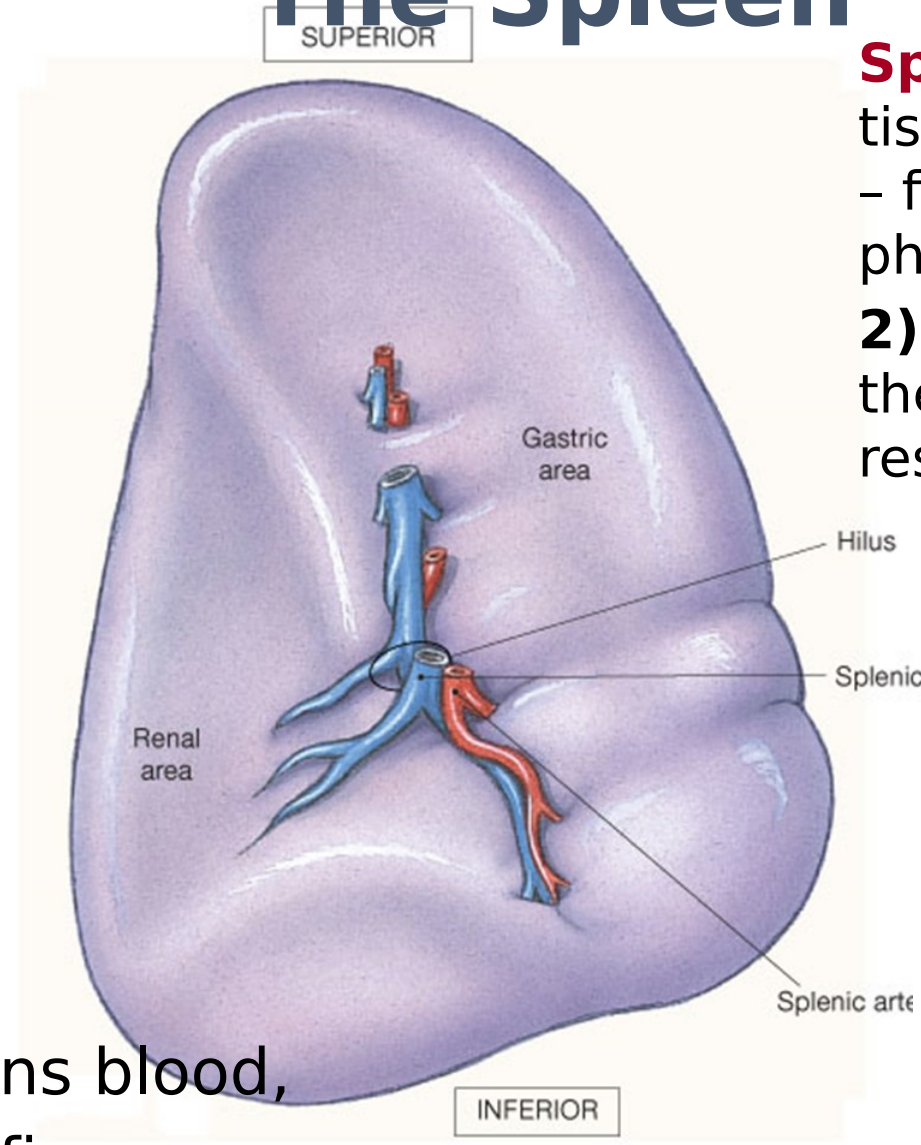




- Behind the sternum, on top of the heart an (in mediastinum)
- Where T cells Differentiate

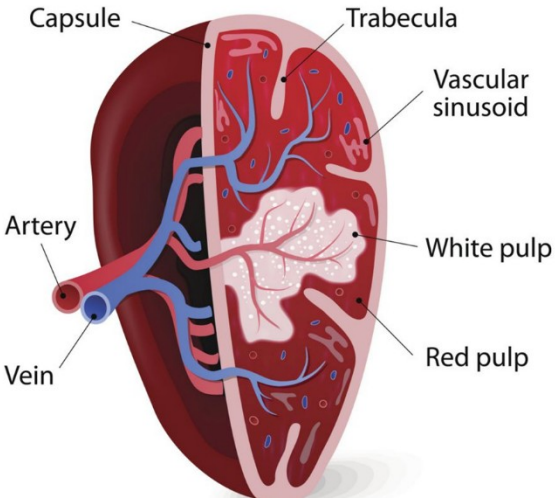
The Spleen

*Largest lymphoid tissue in the body



Spleen made of 2 tissues: **1) Red pulp** – filled with blood and phagocytic cells.

2) White pulp where the lymphocytes reside.



Spleen cleans blood,

Liver detoxifies, makes proteins and organizes.

The Spleen

1) Removes old & abnormal blood cells from circulation (*erythrocyte graveyard*).
2) **Stores Iron** (**Fe**) from the recycled RBCs.
3) Can initiate defensive and protective responses (via T-cells and B-cells).
4) **Hematopoietic** organ – meaning it can store ~**30%** of **RBC** volume for emergency release. Plus, it stores **platelet**